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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/653,070	08/31/2000	MASAYUKI MIZUNO	CA1075	4300

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EXAMINER
VARTANIAN, HARRY

ART UNIT	PAPER NUMBER
2634	2

DATE MAILED: 11/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/653,070	Applicant(s) MIZUNO, MASAYUKI
	Examiner Harry Vartanian	Art Unit 2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-32_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _Claims 1-4, 6-9, 15-18, 21-28, and 30-32_ is/are rejected.

7)☒ Claim(s) _5,10-14,19,20 and 29_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _31 August 2000_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: .

U.S. Patent and Trademark Office
PTOL-326 (Rev. 04-01)   Office Action Summary   Part of Paper No. 09653070

Detailed Action

Informalities

1.   The title of the invention is not descriptive. Interconnect Circuit can have numerous interpretations and does not encompass the specific nature of the disclosed invention. A new title is required that is clearly indicative of the invention to which the claims are directed.   A possible alternative would ***"A Method for Transmission Line Data Management and Control."***

Drawings

2.   The drawings are objected to because label "5" in Figs 1, 2, 3, and 11 is inconsistent with the labeling convention of inputs used in the rest of the figures. In all other blocks 2a, 2b, and 4 input/output ports(8, 9, 10, 11) are labeled within the block. The current labeling convention for congestion input terminal 5 could be misconstrued as referring to the congestion line 3. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3.   The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the direction of the data flow and congestion signals must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

     A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

4.   Claims 5, 10-14, 19-20 and 29 are objected to as being dependent upon a rejected

base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

> *(b) the invention was patented or described in a printed publication in this or a*
>
> *foreign country or in public use or on sale in this country, more than one year prior*
>
> *to the date of application for patent in the United States.*

5.   Claims 1 through 4, 6 through 9, 15 through 18, 21 through 28, and 30 through 32

are rejected under 35 U.S.C. 102(b) as being anticipated by Newman(US Patent No.

5,457,687). Regarding Claims 1 and 2, Newman discloses a "circuit with a virtual channel

connection of the source (S) sending information in a forward direction (F) to a destination

(D) and with a reverse direction (R) for transmitting control signals to the source (S)."

(Column 7, Lines 17-20) Newman proceeds to describes his reverse direction circuit as

sending congestion signals(Abstract). Newman describes his virtual channel connection as

having multiple nodes in between(Fig 2) that are "interconnected" to send data(Column 5,

Lines 67).   Newman also discloses that typical nodes in an ATM switch have node

controllers which has "functions including connection establishment and release, bandwidth

reservation, congestion control, maintenance and network management." (Column 2, Lines

5-8) Each time a buffer fills up the destination queue, Newman states that a backward

explicit congestion notification(BECN)(Column 52, line 12-13) is generated(Column 52, Lines 49-53). This BECN is selectively generated based on the load of the network(Column 52, Lines 49-53).

Regarding Claim 3, Newman discloses the switches in an interconnect circuit as having buffers, which are storage elements, to store data(Column 2, Lines 39-48).

Regarding Claim 4, Newman discloses that a backward explicit congestion notification(BECN)(Column 52, line 12-13) is generated "If the number of cells stored in the destination queue (Q) exceeds a threshold, the filter (F) will generate BECN cells. With no filtering in the manner previously described, for each incoming cell, one BECN cell will be generated and returned to the source transmitter (T) of the incoming cell." (Column 52, Lines 49-53)

Regarding Claim 6, Newman discloses that his network has a plurality of channels, i.e. data lines, that are each responsive to congestion control signals(Column 61, Lines 34-42).

Regarding Claim 7, Newman in Fig 4 discloses a plurality of virtual channels which are shown to be arranged in a parallel manner with one node controller(item 13).

Regarding Claims 8 and 9, in Fig 3 Newman discloses an interconnect containing "forward circuitry"(Column 8, Line 60) and "reverse circuitry"(Column 8, Line 60). The connections for these circuits in the nodes are shown in Fig 3 with items 6-0 and 7-0, respectively. In Fig 3, one also sees a plurality of these circuits. Although the applicant claims that the devices on his data line are "driving circuits", "forward circuit" is a similar phrase to

describe an apparatus that drives a transmission line. Newman also describes each switch

in his interconnect circuit as having buffers(Column 2, Lines 39-48).   Since a buffer is a

type of storage element, the limitations of Claim 8 are met.

Furthermore, regarding Claim 9 Newman describes his switch as having a filter that uses a

flip-flop to store control logic(Column 54, Lines 28-35). Since a flip-flop is a type of device

that performs logical functions, the limitations of Claim 9 are met.

Regarding Claims 15, 16, and 17 Newman discloses that each node contain "forward

circuitry"(Column 8, Line 60) and "reverse circuitry"(Column 8, Line 60). The connections

for these circuits in the nodes are shown in Fig 3 with items 6-0 and 7-0, respectively. In

Fig 3, one also sees a plurality of these circuits. Although the applicant claims that the

devices on his data line are "driving circuits", forward circuits is a similar phrase to

describe an apparatus that drives a transmission line. Newman discloses that these nodes

are selectively interrupted by the generation of said BECN signals by the destination or

nodes. Fig 3 also shows the congestion and data signals moving in opposite directions.

Moreover, Claim 17 is rejected on the basis of Fig 3 where the congestion signal is shown

to progress along the congestion line in sequence from left to right.

Regarding Claim 18, Newman discloses that his invention "on receipt of a BECN cell on a

particular virtual channel, a source reduces it transmission rate for the indicated virtual

channel. If no BECN cells are received on a particular virtual channel for a certain period of

time, a source may gradually restore its transmission rate."(Abstract) This indicates that

there are two signals. Each signal tells the source and the nodes on interconnect whether

or not to send data on the line and store it if congested.

Regarding Claim 21, Newman discloses that his network has a plurality of channels, i.e. data lines, that are each responsive to congestion control signals depending on the traffic on the data line(Column 61, Lines 34-42).

Regarding Claim 22, Newman in Fig 4 shows his plurality of virtual channels are shown to be arranged in parallel manner with one node controller(item 13).

Regarding Claims 23 and 24, Newman discloses that the switches in an interconnect circuit have buffers(Column 2, Lines 39-48) used to store information when a BECN flag is set. Furthermore, Newman describes this switch as having a filter that uses a flip-flop to store control logic(Column 54, Lines 28-35). As previously stated, each switch also has driving capabilities. Since a flip-flop is a type of device that performs logical functions, Claim 24 is rejected.

Regarding Claim 25, Newman states that his invention "on receipt of a BECN cell on a particular virtual channel, a source reduces it transmission rate for the indicated virtual channel. If no BECN cells are received on a particular virtual channel for a certain period of time, a source may gradually restore its transmission rate."(Abstract) This indicates that there are two signals. Each signal tells the source and the nodes on interconnect whether or not to send data on the line.

Regarding Claims 26-28, in Fig 3 Newman discloses an interconnect containing "forward circuitry"(Column 8, Line 60) and "reverse circuitry"(Column 8, Line 60). The connections for these circuits in the nodes are shown in Fig 3 with items 6-0 and 7-0, respectively. In

Fig 3, one also sees a plurality of these circuits. Although the applicant claims that the devices on his data line are "driving circuits", "forward circuit" is a similar phrase to describe an apparatus that drives a transmission line. Newman discloses that these nodes are selectively interrupted by the generation of said BECN signals by the destination or nodes. Moreover, Claim 27 is rejected on the basis of Fig 3 where the congestion signal is shown to progress along the congestion line opposite to the direction of data flow.

Moreover, for Claim 28 Newman discloses switches in an interconnect circuit as having buffers(Column 2, Lines 39-48) that store information when a BECN flag is set.

Regarding Claim 30, Newman discloses that his network has a plurality of channels, i.e. data lines, that are each responsive to congestion control signals depending on the traffic on the data line(Column 61, Lines 34-42). The selective interruption of transmission is claimed by Newman on Column 52, Lines 49-53.

Regarding Claim 31, in Fig 4 Newman shows a plurality of virtual channels to be arranged in parallel manner with one node controller(item 13).

Regarding Claim 32, Newman discloses that his switch has a filter that uses a flip-flop to store control logic(Column 54, Lines 28-35).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry Vartanian whose telephone number is 703.305.8698. The examiner can normally be reached on 9-5:30 Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703.305.4714. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is NONE.

Harry Vartanian
Examiner
Art Unit 2634

HV

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